#24. $\sum_{n=1}^{\infty} -\left(\frac{-1}{5}\right)^n = \frac{\frac{1}{5}}{1+\frac{1}{5}} = \frac{1}{6}$

초항이 $a_0 = \frac{1}{5}$ 이고 공비가 $r = -\frac{1}{5}$ 인 등비급수다.

Q.E.D

#25. $\sum_{n=1}^{\infty} \frac{1}{n(n+1)} = \sum_{n=1}^{\infty} \left(\frac{1}{n} - \frac{1}{n+1}\right)$

$= \lim_{N\to\infty} \sum_{n=1}^{N} \left(\frac{1}{n} - \frac{1}{n+1}\right)$

$= \lim_{N\to\infty} \left\langle \left(1 - \frac{1}{2}\right) + \left(\frac{1}{2} - \frac{1}{3}\right) + \cdots \left(\frac{1}{N} - \frac{1}{N+1}\right) \right\rangle$

$= \lim_{N\to\infty} \left(1 - \frac{1}{N+1}\right) = 1.$

Q.E.D